The effect of early entrepreneurship education

Evidence from a randomized field experiment

Laura Rosendahl Huber
Max Planck Institute for Innovation and Competition

Randolph Sloof
University of Amsterdam

Mirjam Van Praag
VU University Amsterdam and Copenhagen Business School

Max Planck Institute
for Innovation and Competition

INTRODUCTION

- Entrepreneurship education programs (for all ages) are proliferating in countries around the world
- Aim of education programs is threefold:
  - teach entrepreneurial skills and knowledge
  - increase awareness for entrepreneurship
  - give students the opportunity to "try" entrepreneurship
- Ultimate goal of entrepreneurship education policies:
  - increase entrepreneurial activity
  - decrease failed start-ups

➢ **Are entrepreneurship education programs effective in reaching their stated goals?**

THE PROGRAM

- Leading entrepreneurship education program in primary education in the US and the Netherlands (BizWorld)
- Children in last grade of primary school (age 11 or 12)
- 5 day program, taught by an entrepreneur
- Entrepreneurial teams of 5-6 pupils
- Encompasses entire entrepreneurial (business) cycle

HOW IT WORKS

Day 1 Introduction and some theory on entrepreneurship
Apply for position in entrepreneurial team

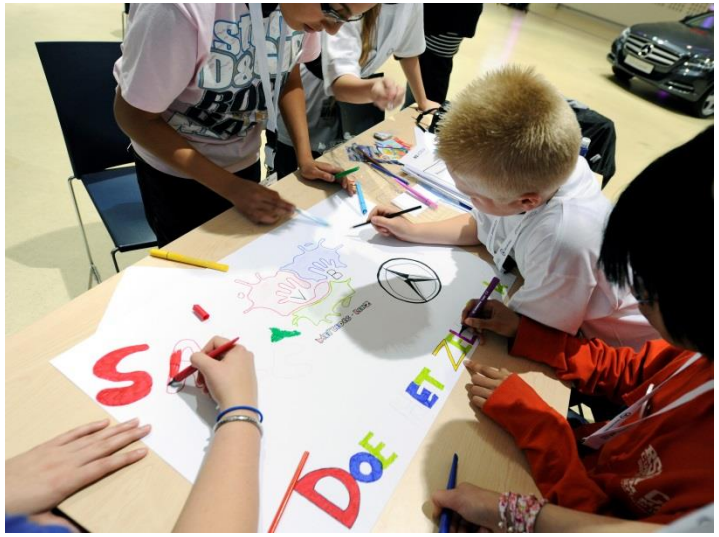
Day 2 Register company
Present business plan to "venture capitalist" to raise start-up capital
Company stock prices displayed in class

Day 3 Design and manufacture products (friendship bracelets)
Calculate production costs (incl. rent, material, salaries, etc.)
Determine product prices

Day 4 Design marketing campaign (poster and "commercial")
Sell products to pupils in lower grade thereby creating revenue

Day 5 Complete profit- and loss statement and balance sheet
Winning team announced and rewarded

WHAT IT LOOKS LIKE



PRACTICALITIES

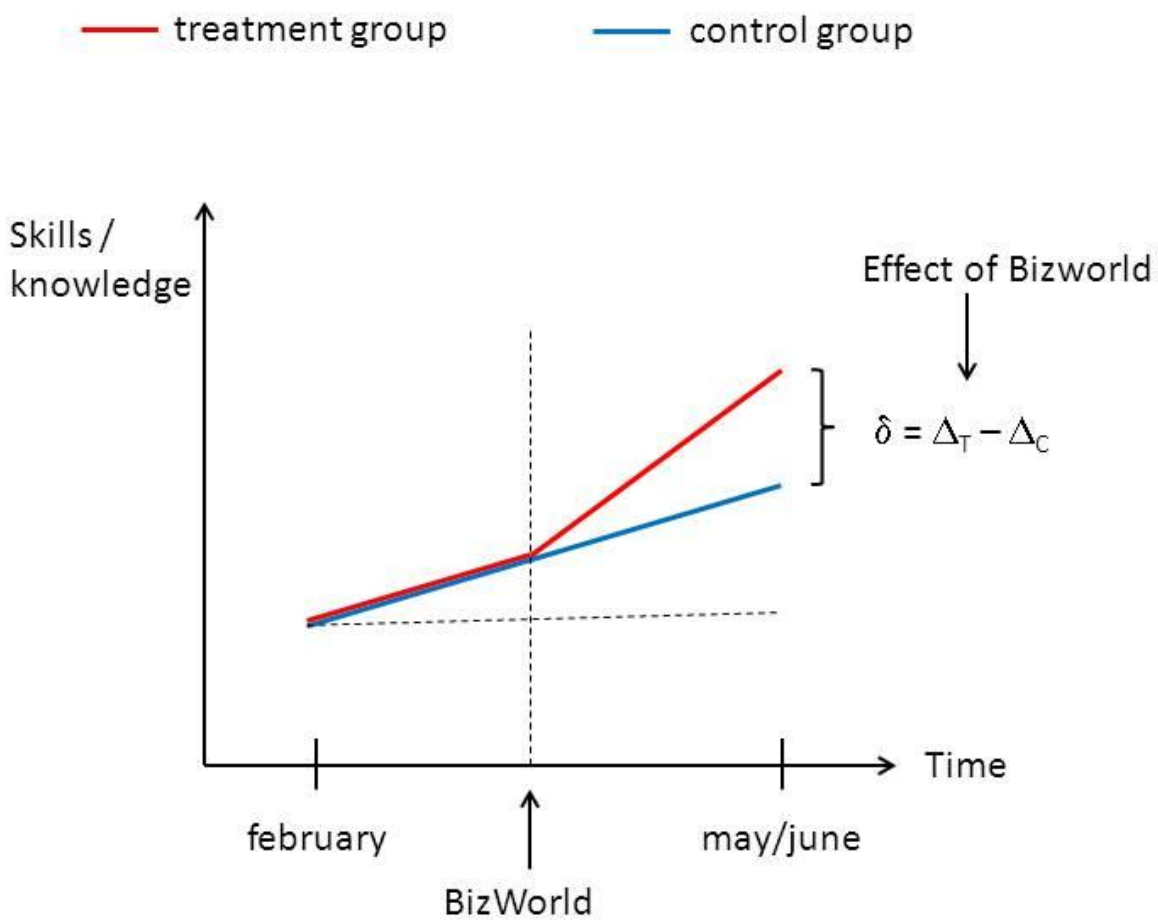
- Experiment conducted in spring 2010 and 2011
- 85 primary schools (118 classes) in the Netherlands
- We assigned classes randomly to treatment and (wait listed) control group
- Final sample
  - treatment group: 1729 pupils
  - control group: 684 pupils
- Two questionnaires: February (pre-test) and June (post-test)

OUTCOME VARIABLES

Non-cognitive entrepreneurial skills are measured by validated self-assessment measures

Non-cognitive entrepreneurial skills	**Definition**
Self-Efficacy	Belief in own ability
Need for Achievement	Desire to do well
Risk Taking	Predisposition towards risky alternatives
Social Orientation	Ability to make useful connections
Persistence	Ability to continue despite setbacks
Motivating	Ability to inspire or stimulate subordinates
Analyzing	Ability to assess complex situations
Pro-activity	Willingness to take action
Creativity	Ability to create many solutions/opportunities

TREATMENT EFFECT



TREATMENT EFFECT

Non-cognitive entrepreneurial skills	DID no controls		DID with controls	
Self-Efficacy	0.149***	(0.049)	0.155***	(0.043)
Need for Achievement	0.166***	(0.052)	0.158***	(0.054)
Risk Taking	0.114**	(0.050)	0.124***	(0.051)
Social Orientation	0.063	(0.053)	0.048	(0.053)
Persistence	0.105**	(0.050)	0.110**	(0.049)
Motivating	0.079	(0.055)	0.071	(0.056)
Analyzing	0.127***	(0.044)	0.135***	(0.048)
Pro-activity	0.144***	(0.050)	0.166***	(0.045)
Creativity	0.096*	(0.052)	0.114**	(0.054)
Number of observations	2351		2304	

SUMMARY AND CONCLUSION

- Motivation: lack of knowledge about the effectiveness of early entrepreneurship education and skill development
- Key findings:
  - positive impact on non-cognitive entrepreneurial skills
  - early entrepreneurship education seems valuable
  - skills beget skills?
- Limitations:
  - we only look at the effects of one specific program
  - schools in sample voluntarily signed up for the program
  - unclear what precisely drives our results
  - our research set-up prevents us from looking at long-term effects